

Online Learning Experience (OLE) Planning Grid - ITEC 7480

Curriculum Standard (applicable to k12 only):

4th Grade Science: Energy and Ecosystems

S4L1. Students will describe the roles of organisms and the flow of energy within an ecosystem.

- Identify the roles of producers, consumers, and decomposers in a community.
- Demonstrate the flow of energy through a food web/food chain beginning with sunlight and including producers, consumers, and decomposers.
- Predict how changes in the environment would affect a community (ecosystem) of organisms.
- Predict effects on a population if some of the plants or animals in the community are scarce or if there are too many.

Student Objectives/Outcomes:	Bloom's Level:	Activities:	Assessments:
1. Demonstrate that a food chain shows how energy moves from producers to consumers.	Apply	<ul style="list-style-type: none"> Start with the Web of Life story. Watch Food Chains to explore how food energy is transferred in a sequence of living things. Use the Living Edens site to look at a real world example of a food chain and the vocabulary in this course. Practice how producers and consumers interact with each other in the game Food Fight. Apply what you have learned by creating a Food Web. When you have completed your web, take a screen shot and upload it to the class DropBox. 	<ul style="list-style-type: none"> Instructor's feedback on the student's ability to properly demonstrate how energy moves from producers to consumers in a food web.
2. Recognize that energy for most food chains begins with energy from the sun.	Analysis	<ul style="list-style-type: none"> Watch Bill Nye: Food Web to explore how energy moves from producers to consumers (24 min). Explore the Energy Pyramid; Energy Pyramid. Practice how energy from the sun travels through the food chain by playing the Food Chain game. Show what you have learned by 	<ul style="list-style-type: none"> Instructor's feedback on the quality of student's ability to analyze how the energy from the sun affects the food chain and energy pyramid.

		responding to the discussion post.	
3. Distinguish between herbivores, carnivores, and omnivores.	Knowledge and Comprehension	<ul style="list-style-type: none"> Learn what herbivores, carnivores, and omnivores are and how they interact with each other. Practice how herbivores, carnivores, and omnivores interact in this WebQuest. Online quiz in LMS. 	<ul style="list-style-type: none"> Completion of WebQuest and instructor's feedback on the student's completed task of what are herbivores, carnivores, and omnivores. Completion of online quiz.
4. Explain how organisms higher in the food chain are affected by changes in the number of organisms lower in the food chain.	Analysis	<ul style="list-style-type: none"> Endangered Ecosystems Project: Join research teams in Costa Rica and Mexico to learn about tropical ecosystems, the important roles of large and small animals within an ecosystem, and the threats to their survival. 	<ul style="list-style-type: none"> Completion of project and science notebook illustrating the analysis of how food chains are affected by changes in the number of organisms lower in the food chain.